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Feeling Like Crying When Listening to Music: Exploring Musical and Contextual Features

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Abstract:

Feeling like crying is a common response to music. Recent work suggests two forms of aesthetic crying: an awe-inspired, positive kind and a distressed, sad kind. Besides their emotional tone, what differentiates these experiences? The present research examined the context and subjective musical content of aesthetic crying. A sample of 961 adults described the emotional tone, musical features, and social and environmental contexts of a feeling like crying experience. Awe experiences more often involved religious or classical music that was complex and beautiful, and people were often with others and hearing the music live. Sad experiences more often involved popular genres (e.g., Pop, Soul or R&B, Country) that were cold and unpleasant, and people often noted that the music reminded them of someone or that they already felt like crying before listening to the music. The distinctions between these two kinds of experiences suggest that current theories of aesthetic crying could be fruitfully expanded.

Keywords: feeling like crying | music | awe | personality

Article:

Feeling like crying—an experience ranging from feeling like one might cry, such as getting a lump in the throat or having tears welling up, to actually crying—is a common response to the arts in general (Nusbaum & Silvia, 2014; Pelowski, 2015; Trimble, 2012) and to music in particular. In his research on strong experiences of music, for example, Gabrielsson (2011, p. 374) found that people felt like crying in roughly 24% of the episodes. For musical experiences more broadly, around 90% of people, when simply asked if they could remember a time when music made them feel like crying, could describe an instance (Cotter, Silvia, & Fayn, 2018).

In our recent work, we suggested that there are at least two major kinds of feeling like crying experiences: a positive, awe-filled experience that is inspiring and profound, and a negative, sad experience that is upsetting and distressing (Cotter et al., 2018). When a large sample of people rated the emotional quality of a crying experience, these two major clusters emerged via latent class analysis. The awe class of experiences was associated with inspired, transcendent, and euphoric emotions (e.g., feeling amazed, happy, inspired, touched, full of awe, and curious); the sad class of experiences, in contrast, was associated with negative emotions (e.g., feeling sad,

anxious, angry, upset, and out of control). Openness to experience, a trait associated with awe-like states (Silvia, Fayn, Nusbaum, & Beaty, 2015), predicted reporting an awe experience of crying; neuroticism, a trait associated with negative emotions (Widiger, 2009), predicted reporting a sad experience of crying.

The notion of two major kinds of crying experiences—one associated with awe and the other with sadness—fits qualitative work on aesthetic crying, which finds both joyful and sorrowful examples (Gabrielsson, 2011), and with the broader complexity of human crying, which accompanies many emotions (Miceli & Castelfranchi, 2003). But what, besides their emotional tone, differentiates these two experiences? Our past work sought to identify distinct emotional kinds of crying experiences, but it had little to say about what distinguishes awe-like, inspired crying experiences from sad, distressing ones. In the present work, we explore the contexts and musical features of feeling like crying experiences, with the aim of characterizing the ways in which these kinds of aesthetic crying differ.

First, we explored aspects of the music itself. Several features of music are associated with awe-inspired and sad states. Music that evokes feelings of awe, chills, and wonder, for example, commonly has sudden dynamic shifts, a large dynamic range and sonic envelope, and an accumulation of energy (Huron, 2006; Sloboda, 1991). Music that evokes feelings of sadness, in contrast, commonly has a slow tempo, minor mode, harmonic passages descending the cycle of fifths to the tonic, and lyrical themes of loss (Nusbaum & Silvia, 2014; Sloboda, 1991). Assessing the kinds of music people are listening to, both in terms of genres and musical dimensions like tempo and energy, seems like a natural place to start when examining differences between awe-inspired and sad crying experiences.

Second, we explored aspects of the musical context—the physical and social environments in which the crying experience unfolded. One major distinction for music in everyday life is whether the music was performed live or recorded (Clarke, Dibben, & Pitts, 2010). Strong experiences to recorded music are common (Gabrielsson, 2011; Nusbaum et al., 2014), but there is nothing quite like the visceral and emotional impact of live music (Coutinho & Scherer, 2017). Another salient issue is whether people are alone or with other people. Solitary music listening is often more focused (Egermann et al., 2011; Koehler & Broughton, 2017; Zhang et al., 2018), and people are more likely to listen to sad music when alone (Juslin, Liljeström, Västfjäll, Barradas, & Silva, 2008).

In the present research, we explored how aspects of the musical content and context differ between awe-filled versus sad crying experiences. We asked a sample of nearly 1,000 people if they could recall a recent time when music made them feel like crying. If they could, they described the experience using a large pool of items, both closed and open ended, to capture the where, when, and why of feeling like crying from music. Our study was primarily descriptive, in the spirit of past work (Gabrielsson, 2011), but we expected that we would replicate the two distinct kinds of feeling like crying experiences found in recent work (Cotter et al., 2018). The broad assessment of factors can thus illuminate ways in which inspiring and distressing experiences of aesthetic crying differ.

Method

Participants and Procedure

Our final sample contained 961 participants from two samples: Students enrolled at the University of North Carolina at Greensboro ($n = 388$) and adults from Amazon Mechanical Turk (MTurk; $n = 573$). University students completed the surveys in small groups on computers and received credit toward a course research option. MTurk participants responded to a human intelligence task that described a short survey about creativity and the arts. Only people from the United States who had completed at least 100 human intelligence tasks and had an approval rating of at least 80% could complete the task. Participants from MTurk completed an identical version of the survey online via Qualtrics and received $1.75 USD. Participants with elevated scores on items intended to capture inattentiveness (Maniaci & Rogge, 2014; McKibben & Silvia, 2016, 2017) were excluded from the final sample. The final sample was predominantly young ($M = 28.77$, $SD = 11.88$, range = 18–80) and female (60.91%). Most participants identified as White (72.04%) or African American (21.62%). The sample in this study was thus much broader in age than our prior one, which included only college students from the United States and Australia (Cotter et al., 2018).

After providing informed consent, participants were asked to recall and describe a time when they felt like crying, or did cry, while listening to music. People who reported having these experiences completed the full feeling like crying questionnaire. Participants also completed a measure of personality and other surveys unrelated to the present research. The materials and analysis files are archived at Open Science Framework (https://osf.io/k2wgq/); we invite researchers to explore and use the data.

Measures

Feeling like crying and its emotional quality. Participants responded to a 46-item questionnaire (see Appendix) about their feeling like crying experience. First, participants were asked if they could recall a time when they felt like crying or actually cried when listening to music (assessed as *Yes* or *No*). To capture the emotional quality of the experience, participants rated how intensely they felt different emotions on a 5-point scale from *Not at all* (1) to *Very* (5). As in our past study (Cotter et al., 2018), the items included a range of emotional experiences: *happy*, *sad*, *inspired*, *curious*, *anxious*, *overwhelmed*, *out of control*, *amazed*, *touched*, *euphoric*, *awe*, *upset*, *depressed, angry*, *chills or goosebumps*, and *pleasant*. Each item was framed similarly (e.g., *How HAPPY did you feel?*).

Features of the music. Aspects of the song were assessed with two main approaches. First, we used a set of 11 semantic-differential items to capture people's subjective ratings of the music's qualities, such as *fast versus slow*, *quiet versus loud*, *repetitive versus varied*, and *playful versus serious* (see Appendix for all 11 items). Semantic differential items have been widely used for discerning important subjective qualities of aesthetic events (e.g., Berlyne & Peckham, 1966).

Second, so we could classify the songs, people were asked "What was the name of the song? If you don't know it, what was the genre or style of the music?" The songs were then grouped by genre (see Table 1) by searching for each song on iTunes, which classifies musical artists into

genres—for analytic purposes, songs were grouped by the listed genre for each song's artist. If participants listed the genre rather than the name of a song, the listed genre was used for analytic purposes. If a clear artist for a song could not be identified or if multiple songs were listed, these entries were considered missing.

Table 1. Music Genres for Songs Heard When Feeling Like Crying.

	Awe class (*n* = 311)		**Sad class (*n* = 467)**	
Genre	***N***	**%**	***N***	**%**
Alternative (e.g., "Creep" by Radiohead)	21	6.75	36	7.71
Blues (e.g., "I'm So Depressed" by Abner Jay)	3	.96	3	.64
Classical (e.g., Beethoven's Ninth Symphony)	35	11.25	14	3.00
Country (e.g., "Hurt" by Johnny Cash)	16	5.14	47	10.06
Dance or electronic (e.g., "Don't You Worry" by Swedish House Mafia)	7	2.25	5	1.07
Folk	2	.64	2	.43
Religious or Gospel (e.g., "Thank You" by Bernita Washington)	41	13.18	33	7.07
Metal (e.g., "Fearless" by For Today)	2	.64	2	.43
International or foreign (e.g., "Mama" by Heintje)	2	.64	5	1.07
Jazz (e.g., "Rise" by Herb Alpert)	2	.64	2	.43
New age (e.g., "Across the Burren" by Michele McLaughlin)	1	.32	0	0
Opera (e.g., "Carmina Burana" by Carl Orff)	4	1.29	0	0
Pop (e.g., "Hello" by Adele)	25	8.04	65	13.92
Hip-Hop or rap (e.g., "Good Enough" by Chance the Rapper)	9	2.98	20	4.28
Reggae (e.g., "Count on You" by Tink)	1	.32	0	0
Singer or songwriter (e.g., "Thinking Out Loud" by Ed Sheeran)	6	1.93	7	1.50
Rock (e.g., "Love Bites" by Def Leppard)	26	8.36	55	11.78
Soul or R&B (e.g., "Alphabet Street" by Prince)	15	4.82	50	10.71
Soundtrack or theme song (e.g., "On My Own" from *Les Miserables*)	16	5.14	4	.86
Easy listening (e.g., "A Morning Spent Thinking of a Life Without You" by Flatsound)	0	0	1	.21
Adult contemporary	0	0	1	.21
Holiday	2	.64	1	.21
Missing	75	24.11	114	24.41

Note. Reported percentages indicate the percentage of participants in their class whose responses were categorized as each musical genre. Examples of songs listed by participants, when specific songs were mentioned for a genre, are in parentheses.

Finally, people completed some additional items, such as whether the song has lyrics (scored *Yes* or *No*), whether the music had special meaning to them (scored *Yes* or *No*), and if the music was familiar to them or something new (scored *Familiar* or *New*).

Musical context. A group of items asked about the environmental and social context of the experience. An open-ended question simply asked people to describe where they were when they felt like crying. For the social environment, we asked if people were alone or with other people. If they reported being with others, they were asked how close they felt to the people they were with (scored 1 = *Not at all close* to *5 = Very close*; this item was ultimately not analyzed because there were too few responses). People also reported if the music was recorded or live, if they chose the music (scored *Yes* or *No*), and if they were one of performers (scored *Yes* or *No*).

A few questions inquired about the causes of crying, such as whether the song made people feel like crying because it reminded them of something or someone (scored *1 = No, not at all* to *5 = Yes, definitely*) and whether they already felt like crying before listening to the song (scored *1 = No, not at all* to *5 = Yes, definitely*). We also simply asked participants in an open-ended question why they thought the music made them cry or feel like crying.

For the open-ended questions that asked about people's location and why they think they cried, we developed initial coding categories after examining a subsample of responses. The most common responses were used as the initial categories. Two research assistants then coded all responses using these initial codes and flagged responses that did not fit them. These responses were then examined and either placed into new coding categories or were grouped into existing ones. Responses that fit many categories or were too vague to code (e.g., "I was in Virginia") were considered missing. Any rater disagreements were reconciled by the first author. Final coding categories for the location of the experience and why people cried can be found in Tables 2 and 3, respectively.

Table 2. People's Location When They Felt Like Crying.

	Awe class (*n* = 311)		**Sad class (*n* = 467)**	
Location	***N***	**%**	***N***	**%**
Home	161	51.77	285	61.03
In transit	42	13.50	102	21.84
Church	23	7.40	8	1.71
Funeral	0	0	22	4.71
Musical performance	38	12.22	7	1.50
Hospital	0	0	3	.64
School	18	5.79	8	1.71
Someone else's home	5	1.61	6	1.28
Store or shopping	0	0	4	.86
Restaurant or café	1	.32	1	.21
Work	3	.96	4	.86
Outdoors	2	.64	2	.43
Party or gathering	3	.96	3	.64
Missing data	15	4.82	12	2.57

Note. Reported percentages indicate the percentage of participants in their class whose responses were categorized as each theme.

Additional crying items. A few additional items rounded out the survey: how long ago the event happened, how often music makes them feel like crying, how helpless they felt, if they would like the experience to happen again (score 1 = *No, definitely not* to 5 = *Yes, definitely*), and an open-ended description of the event.

Assessment of personality. To assess personality, participants completed the HEXACO-100 (Lee & Ashton, 2018). The HEXACO yields trait and facet level scores for honesty-humility, extraversion, agreeableness, conscientiousness, emotionality (neuroticism), and openness to experience. Only trait scores for openness to experience and neuroticism were examined. Participants rated 16 items on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) for each

factor. A small portion of the sample ($n = 94$) did not complete the HEXACO and are excluded from the personality analyses.

Table 3. Reasons People Gave for Feeling Like Crying When Listening to Music.

	Awe class ($n = 311$)		Sad class ($n = 467$)	
Reason	***N***	**%**	***N***	**%**
Reminded of someone	31	9.97	93	19.91
Emotions in the music	22	7.07	16	3.43
Lyrics	21	6.75	53	11.35
Personally meaningful	38	12.22	77	16.49
Overwhelmed by music or its beauty	38	12.22	6	1.28
Nostalgia	8	2.57	5	1.07
Religious meaning	16	5.14	2	.43
Memories of events	31	9.97	99	21.20
Qualities of the music	15	4.82	15	3.21
Music was sad	6	1.93	19	4.07
Did not know	12	3.86	6	1.28
Music-evoked specific emotions	28	9.00	27	5.78
Already felt sad	5	1.61	21	4.50
Story	19	6.11	12	2.57
Missing data	21	6.75	16	3.43

Note. Reported percentages indicate the percentage of participants in their class whose responses were categorized as each theme.

Results

Recall of Feeling Like Crying Experiences

Of our 961 participants, 779 (81.06%) reported remembering a feeling like crying experience when listening to music. The percentage is slightly lower than the percentage found in our prior study (90%), which included only college students. Because not all participants recalled a feeling like crying experience, we predicted the likelihood of recalling a feeling like crying experience using openness to experience and neuroticism scores. Both openness ($\beta = .19$, 95% CI: [.11, .28], $SE = .05$, $p < .001$, OR: 1.76, 95% CI: [1.35, 2.29]) and neuroticism ($\beta = .32$, 95% CI: [.23, .41], $SE = .04$, $p < .001$, OR: 2.78, 95% CI: [2.05, 3.78]) were positively related to remembering a feeling like crying experience—as openness and neuroticism increased, people were more likely to report remembering a feeling like crying experience when listening to music. These findings replicate the effects found by Cotter et al. (2018).

Class Specification and Estimation

We expected to replicate the finding that there are two distinct types of feeling like crying experiences. To do so, we conducted a latent class analysis on the 16 emotion items people rated to describe the experience. There is no single rule of thumb for determining the number of latent classes, so researchers should consider both statistical indices, the broader literature and theory guiding the research question, and their own preferences for simpler or more complex models (Collins & Lanza, 2010; Jung & Wickrama, 2008; Nylund, Asparouhov, & Muthén,

2007; Swanson, Lindenberg, Bauer, & Crosby, 2012). In general, it is best to avoid solutions with small classes (<5% of the sample; Swanson et al., 2012), which are unlikely to replicate. Likewise, for simplicity, "intensity classes"—classes with the same profile pattern but a different level—are often combined into one larger class (Silvia, Kaufman, & Pretz, 2009). All analyses were conducted using the Mplus 8 statistical software.

We tested two-class, three-class, and four-class solutions using standardized scores of people's ratings of the emotions experienced during the feeling like crying experience. Fit indices for these models can be found in Table 4. For the Akaike's information criterion (AIC), Bayesian information criterion (BIC), and adjusted BIC, lower values suggest better fit—these indices favored the four-class solution. The four-class solution contained two intensity classes, however, which led us to discard this solution. The AIC, BIC, and adjusted BIC favored the three-class solution over the two-class solution. Entropy—an index of classification quality—was equal for both solutions (.93) and suggests that both solutions fit well. Neither solution resulted in tiny classes, but the three-class solution did have a smaller class (n = 186) that had substantially fewer participants than a recommended minimum of 300 (Swanson et al., 2012).

Table 4. Latent Class Model Fit Indices.

	Class solution		
Index of fit	**Two classes**	**Three classes**	**Four classes**
Entropy	.93	.93	.91
BIC	31,916	30,955	30,304
Adjusted BIC	31,761	30,746	30,040
AIC	31,688	30,648	29,918

Note. BIC = Bayesian information criterion; AIC = Akaike information criterion.

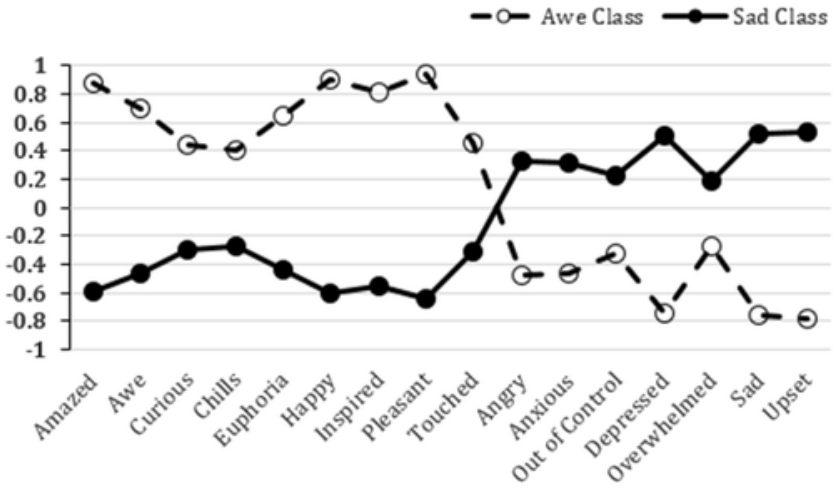

Figure 1. Latent class profile for the two-class solution.

Because solutions with fewer, but larger, classes are more likely to replicate, and the literature supports two feeling like crying experiences, we settled on the two-class solution (see Figure 1). The interpretation of the classes was essentially identical to our prior study. One class, an awe class (40.36% of the sample), was marked by higher feelings of awe, wonder, amazement, euphoria, and feeling touched, among other positive emotions; the other class, a sad class (59.64% of the sample), was marked by feeling sad, upset, anxious, and other negative emotions.

Standardized and unstandardized estimated emotion mean ratings for the two classes are in Table 5.

Table 5. Means of Emotion Items for the Latent Awe and Sad Classes.

	Standardized		Unstandardized	
	Awe class	**Sad class**	**Awe class**	**Sad class**
Amazed	.87	–.59	4.08	1.85
Awe	.69	–.47	3.88	2.13
Curious	.44	–.30	2.73	1.81
Chills	.40	–.27	3.79	2.81
Euphoria	.65	–.44	3.26	1.81
Happy	.90	–.61	3.71	1.53
Inspired	.81	–.55	4.23	2.20
Pleasant	.94	–.64	4.27	1.87
Touched	.45	–.31	4.55	3.63
Angry	–.48	.32	1.42	2.51
Anxious	–.46	.31	1.83	2.86
Out of control	–.32	.22	1.90	2.62
Depressed	–.74	.50	1.81	3.68
Overwhelmed	–.27	.18	3.26	3.86
Sad	–.76	.52	2.74	4.48
Upset	–.78	.53	1.96	3.98

Note. All items were completed on a 5-point scale.

What Distinguishes the Kinds of Feeling Like Crying Experiences?

To examine differences between the two latent classes, we used auxiliary analyses in Mplus 8 designed to test for the equality of means across latent classes. These are roughly analogous to independent samples *t* tests for continuous variables and χ^2 tests of independence for dichotomous variables. Because of the large sample needed to conduct latent class analyses, the analyses assessing for equality of means are overpowered, so we emphasize the effect sizes over the inferential tests. For continuous variables, we report Cohen's *d* (effect sizes of .2, .5, and .8 represent small, medium, and large effects, respectively; Cohen, 1988), and for dichotomous variables, we report phi coefficients (effect sizes of .1, .3, and .5 represent weak, moderate, and strong effects, respectively; Cohen, 1988). All results can be found in Table 6.

Subjective ratings of musical content. Participants had completed a series of semantic-differential items to describe the qualities of the music heard during the feeling like crying experience. Most of these items were significantly different between the classes, but they were typically small effects (see Table 6). The largest effects were for how *cold*, *complex*, *beautiful*, and *unpleasant* the music was perceived to be. The sad class found the music to be colder ($d = .47$) and more unpleasant ($d = .67$) than the awe class. The awe class, in contrast, rated the music as more complex ($d = .38$) and beautiful ($d = .45$) than the sad class. All other semantic differential items showed smaller effects (ds = .21–.33).

Table 6. Class Differences in Qualities of the Music and Feeling Like Crying Experience.

	Awe class		Sad class		Effect size	
	M	***SD***	***M***	***SD***	***d***	***φ***
Familiar music	***.74***	.44	***.86***	.35		.14
Had lyrics	***.83***	.38	***.94***	.25		.17
Meaningful	*.70*	.46	*.79*	.41		.09
Picked music	.48	.50	.54	.50		.05
Alone or with others	***.39***	.49	***.24***	.43		.15
FLC again	***4.23***	1.02	***2.01***	1.17	2.00	
Long ago	***3.71***	2.09	***4.25***	2.01	.26	
Already FLC	***1.76***	1.15	***2.66***	1.46	.67	
Reminded of something	***3.67***	1.46	***4.42***	1.08	.60	
FLC often	*2.73*	.84	*2.60*	.80	.16	
Feel helpless	***1.76***	1.17	***3.26***	1.42	1.13	
Warm—Cold	***2.38***	1.41	***3.11***	1.66	.47	
Playful—Serious	***5.29***	1.52	***5.67***	1.31	.27	
Light—Heavy	3.46	1.60	3.26	1.67	.12	
Quiet—Loud	***4.00***	1.48	***3.54***	1.40	.32	
Repetitive—Varied	***4.12***	1.62	***3.73***	1.36	.27	
Slow—Fast	***3.26***	1.33	***2.75***	1.29	.23	
Simple—Complex	***4.26***	1.76	***3.61***	1.64	.38	
Soft—Hard	**2.86**	1.44	**2.57**	1.39	.21	
Ugly—Beautiful	***6.54***	.80	***6.13***	.99	.45	
Pleasant—Unpleasant	***1.63***	1.09	***2.50***	1.43	.67	
Weak—Strong	***5.76***	1.23	***5.32***	1.37	.33	

Note. Italicized values indicate values that were significantly different at $p < .05$, bolded values indicate values that were significantly different at $p < .01$, and italicized and bolded values indicate values that were significantly different at $p < .001$. For the effect sizes, phi coefficients (φ) are reported for the categorical outcomes (familiar music, had lyrics, meaningful, picked music, and alone or with others); Cohen's *d* is reported for all other outcomes.

Our coding of the songs yielded a large set of musical genres (see Table 1). It is noteworthy that people reported listening to a wide variety of musical genres when they felt like crying: 20 different genres in the awe class and 19 different genres in the sad class. Some genres, however, were more prevalent and distinguished these two classes. Participants in the awe class were most frequently listening to religious or gospel music (13.18%); participants in the sad class, in contrast, were most frequently listening to pop music (13.92%). Likewise, the awe class more often reported listening to classical music (11.25%) than people in the sad class (3.00%), whereas people in the sad class were more frequently listening to soul or R&B music (10.71%) and country music (10.06%) than the awe class (4.82% and 5.14%, respectively). Rock music was heard relatively and similarly often for both the awe (8.36%) and sad classes (11.78%). In short, the awe class was much more likely to be listening to religious, gospel, and classical music, whereas the sad class was more likely to be listening to a group of popular genres, such as pop, country, and soul or R&B.

We had also asked people whether the music was new or familiar, if the music had special meaning to them, and if the music contained lyrics. Compared with the awe class, the sad class was significantly more likely to be listening to familiar music instead of new music, to music

with special meaning to them, and music containing lyrics, but the effects were relatively small ($\varphi = .14$, .09, and .17, respectively).

Aspects of the musical context. The awe and sad classes showed many differences in aspects of the musical context (see Table 6). Our coding of where people said they were when they felt like crying (Table 2) found that most people in both the awe (57.77%) and sad classes (61.03%) were at home when they had this experience. The only notable difference between the classes was that people in the awe class more frequently reported having their feeling like crying experience at a live performance (12.22%) than the sad class (1.50%).

People in the sad class reported higher levels of feeling like crying prior to listening to any music ($d = .67$) and that the music reminded them of someone or something ($d = .60$) than members of the awe class. In addition, people in the sad class reported feeling significantly more helpless during the feeling like crying experience than people in the awe class ($d = 1.13$). Although the sad class reported experiences that happened longer ago than those reported by the awe class, this was a small effect ($d = .26$). Likewise, people in the awe class were more likely to be with other people than the sad class—in part because they were more likely to be at a live performance, as noted earlier—but this was a small effect ($\varphi = .15$). The classes did not differ on whether they picked the music.

Participants also responded to two general items about feeling like crying experiences. People in the awe class were more likely to say that they would want to have the experience again ($d = 2.00$, a very large effect size) than the sad class. Participants in the awe class also reported having feeling like crying experiences more frequently than the sad class, but this was a small effect ($d = .16$).

Finally, coding of people's open-ended explanations for why they felt like crying yielded an interesting set of reasons (see Table 3). People in the sad class most frequently said they felt like crying because the music brought up specific memories (21.20%) or because it reminded them of a specific person (19.91%)—these responses were less common in the awe class (9.97% and 9.97%, respectively). People in the awe class, in contrast, most frequently reported feeling like crying because the music was personally meaningful (12.22%) or that they were overwhelmed by the music and found it especially beautiful (12.22%). People in the sad class reported similar levels of finding the music personally meaningful (16.49%) but rarely reported feeling overwhelmed by the music (1.28%).

Personality and the Latent Classes

We also wanted to examine whether openness to experience and neuroticism differed between the two classes. Using the auxiliary analyses in Mplus 8, we found that the difference in openness to experience between the awe class ($M = 3.64$, $SD = .64$) and the sad class ($M = 3.45$, $SD = .68$) was statistically significant, $\chi^2(1) = 13.18$, $p < .001$, $d = .30$. People who reported awe experiences were higher in openness than people reporting sad experiences, but this effect was small in magnitude. The difference in neuroticism between the awe class ($M = 3.30$, $SD = .56$) and the sad class ($M = 3.34$, $SD = .60$) was not statistically significant, however, $\chi^2(1) = .27$, $p = .607$, $d = .01$. These findings are similar to those reported by Cotter

et al. (2018), who found higher openness to experience was associated with awe class membership but that increased neuroticism was only a marginal predictor of sad class membership.

Discussion

Feeling like crying when listening to music is both common and complicated (Nusbaum & Silvia, 2014). The present study sought to explore distinctions between two major emotional kinds of aesthetic crying experiences—marked by feelings of awe or sadness (Cotter et al., 2018)—by examining aspects of the music's content and context. The two major classes of experiences were replicated based on a latent class analysis of the emotional qualities of the event, and these classes were then used to explore differences between these diverging experiences of aesthetic crying.

For musical features, several notable findings appeared. Regarding genres, classical, religious, or gospel music were more prevalent in the awe experiences of crying; popular genres—such as pop, country, and soul or R&B—were more prevalent in the sad experiences; and rock music was equally prominent in both. When the music is viewed in terms of subjective qualities via semantic differential scales, music during awe-inspired crying was rated as more complex and beautiful, and music during sad events was colder and more unpleasant. People also indicated that music during sad crying episodes was more likely to be familiar, personally meaningful, and lyrical. For musical context, some important social and environmental aspects distinguished between the kinds of crying experiences. Awe experiences were more likely when people were with others instead of alone and when the music was performed live. In addition, sad experiences were more likely when people felt like crying prior to the music and when the music reminded them of someone they knew.

Taken together, these findings suggest that crying experiences rooted in awe and in sadness seem to reflect distinct kinds of musical scenarios. For awe-inspired crying, it seems much more likely that the music per se is prompting feeling like crying—a theme in that class is that people are often with other people and listening to music that is warm, complex, and beautiful (commonly rock, gospel, religious, and classical genres). In their reasons for why they thought they cried, people in the awe class commonly referenced the music itself, such as its beauty and special meaning. For sad crying, a theme is that crying is largely related to extra-musical themes of loss: People commonly reported feeling like crying before they started listening to music, they were alone, and they commonly said they were crying because the music reminded them of someone or something.

This pattern calls to mind Tan's (1996) distinction, made in the context of emotional responses to film, between emotions that are *from* an aesthetic event and emotions that are *about* an aesthetic event. It seems more common that awe-based crying is "from music," in that people's feeling like crying is a response to musical features of the song, such as its beauty and vastness. For sadness-based crying, in contrast, the music appears to be part of a broader unpleasant episode in which people are already sad or reminded by the music of something or someone. We should emphasize, of course, that our findings show that an enormous range of genres and contexts were

associated with feeling like crying, so this abstraction of typical profiles should not obscure the intriguing heterogeneity in people's crying experiences.

Indeed, the rich variability in crying experiences found in this study raises questions for theories of aesthetic crying more generally, which propose that crying stems from a sense of helplessness as people give up trying to comprehend something ineluctable and beautiful (Miceli & Castelfranchi, 2003; Pelowski, 2015). One point the current findings make is that aesthetic crying, at least in music listening contexts, is not always "crying from" music, but rather often results from a larger emotional scenario in which music is involved. Although such cases might be seen as not being strictly "aesthetic," a complete model of crying and the arts ought to include these common cases. In addition, the quality of awe-inspired crying seems at odds with the process of grappling, failing, and capitulating proposed by past models (Pelowski & Akiba, 2011). Episodes of awe-inspired crying were marked by low ratings of helplessness, high ratings of intense positive states like euphoria and amazement, and a much higher likelihood that people would want to experience the event again.

It is possible that awe-inspired crying and sad crying both stem from the same underlying process involving an abstract theme of helplessness. Nevertheless, it is worth considering whether these divergent experiences—even when they are both "from music" instead of part of a broader emotional scenario—can both be explained by helplessness models. The humanistic and transpersonal traditions, for example, would suggest that people can cry as a relatively direct response to beauty (e.g., Braud, 2001; Schneider, 2009). It seems needlessly complex to assume that the event must first be seen as ineffable and that people must want to try to escape the situation or reduce it to existing schemas before giving in and crying (Pelowski, 2015). This theoretical debate is not something that can be settled here, but the distinctions between crying rooted in awe and sadness suggest that theories of aesthetic crying might be fruitfully expanded.

Appendix

Feeling Like Crying Questionnaire

People get a wide range of feelings when listening to music. Sometimes, music makes people feel like crying (they might be near tears, such as choking up, tearing up, or getting a lump in the throat or tears in their eyes). Other times, they actually start crying. For this study, feeling like crying and actually crying are basically the same thing. The following questions ask about people's experiences of feeling like crying and actually crying as a result of music.

Q1. Please take a moment to remember a time when music made you feel like crying or cry. If several examples come to mind, try to focus on the most vivid and memorable experience. Can you remember a time when music made you cry or feel like crying? *Yes* or *No*
Q2. Please briefly describe the situation. *Free response*
Q3. How long ago did this experience happen? *This past week*, *Within the past month*, *Within the past 3 months*, *Within the past 6 months*, *Within the past 12 months*, *Longer than a year ago*, *Longer than 5 years ago*
Q4. What was the name of the song? If you do not know it, what was the genre or style of the music? *Free response*

Q5. Did the song make you cry or feel like crying because it reminded you of something or someone? *1—No, not at all* to *5—Yes, definitely*
Q6. Did you already feel like crying before listening to the song? *1—No, not at all* to *5—Yes, definitely*
Q7. Why do you think the music made you cry or feel like crying? *Free response*
Q8. Where were you when this happened? *Free response*
Q9. Were you alone by yourself, or were you with other people? *I was by myself*, *I was with other people but I wasn't interacting with them*, *I was with other people*, *and I was interacting with them* (Coded as 0 = *alone*; 1 = *with other people [interacting or not]*)
Q10. How close did you feel to the people you were with? *1—Not at all close* to *5—Very close*

The following questions ask you to rate the different feelings and emotions you had at the time music made you feel like crying. (Questions 11–27 were rated on a 1 = *Not at all* to 5 = *Very* scale).

Q11. How HAPPY did you feel?
Q12. How SAD did you feel?
Q13. How INSPIRED did you feel?
Q14. How CURIOUS did you feel?
Q15. How ANXIOUS did you feel?
Q16. How OVERWHELMED did you feel?
Q17. How OUT OF CONTROL did you feel?
Q18. How AMAZED did you feel?
Q19. How TOUCHED did you feel?
Q20. How EUPHORIC did you feel?
Q21. How full of AWE did you feel?
Q22. How UPSET did you feel?
Q23. How DEPRESSED did you feel?
Q24. How ANGRY did you feel?
Q25. How HELPLESS did you feel?
Q26. How much did you get CHILLS or GOOSEBUMPS?
Q27. Overall, how PLEASANT was the experience?
Q28. Overall, is this an experience you would like to happen again? *1—No, definitely not* to *5—Yes, definitely*

The following questions ask you to rate and describe different aspects of the music that was playing.

Q29. Did you choose the music that made you cry or feel like crying? *Yes* or *No*
Q30. Did the music have special meaning to you? *Yes* or *No*
Q31. Did the music have lyrics? *Yes* or *No*
Q32. Was the music recorded, or was it being performed live? *It was recorded* or *It was being performed live*
Q33. Were you one of the performers of the music (one of the singers or musicians)? *Yes* or *No*
Q34. Was the music something familiar that you had heard before, or was it something new? *Familiar, had heard before* or *New, never heard before*

Q35. How SLOW or FAST was the music? *1—SLOW* to *7—FAST*
Q36. How SOFT or HARD was the music? *1—SOFT* to *7—HARD*
Q37. How QUIET or LOUD was the music? *1—QUIET* to *7—LOUD*
Q38. How SIMPLE or COMPLEX was the music? *1—SIMPLE* to *7—COMPLEX*
Q39. How LIGHT or HEAVY was the music? *1— LIGHT* to *7—HEAVY*
Q40. How UGLY or BEAUTIFUL was the music? *1—UGLY* to *7—BEAUTIFUL*
Q41. How REPETITIVE or VARIED was the music? *1—REPETITIVE* to *7—VARIED*
Q42. How WARM or COLD was the music? *1—WARM* to *7—COLD*
Q43. How PLAYFUL or SERIOUS was the music? *1—PLAYFUL* to *7—SERIOUS*
Q44. How WEAK or STRONG was the music? *1—WEAK* to *7—STRONG*
Q45. How PLEASANT or UNPLEASANT was the music? *1—PLEASANT* to *7—UNPLEASANT*
Q46. In general, how often does listening to music make you feel like crying or cry? *Never, Very Rarely, Occasionally, Often, Very Often*

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Some of these findings were presented at the 2016 meeting of the American Psychological Association and the 2017 meeting of the Society of Southeastern Social Psychologists.

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References

Berlyne, D. E., Peckham, S. (1966). The semantic differential and other measures of reaction to visual complexity. Canadian Journal of Psychology, 20, 125–135.

Braud, W. (2001). Experiencing tears of wonder-joy: Seeing with the heart's eye. The Journal of Transpersonal Psychology, 33(2), 99–111.

Clarke, E., Dibben, N., Pitts, S. (2010). Music and mind in everyday life. Oxford, England: Oxford University Press.

Cohen, J. (1988). Statistical power for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, L. M., Lanza, S. T. (2010). Latent class and latent transition analysis: With applications in the social, behavioral, and health sciences. Hoboken, NJ: Wiley.

Cotter, K. N., Silvia, P. J., Fayn, K. (2018). What does feeling like crying when listening to music feel like? Psychology of Aesthetics, Creativity, and the Arts, 12(2), 216–227.

Coutinho, E., Scherer, K. R. (2017). The effect of context and audio-visual modality on emotions elicited by a musical performance. Psychology of Music, 45(4), 550–569.

Egermann, H., Sutherland, M. E., Grewe, O., Nagel, F., Kopiez, R., Altenmüller, E. (2011). Does music listening in a social context alter experience? A physiological and psychological perspective on emotion. Musicae Scientiae, 15(3), 307–323.

Gabrielsson, A. (2011). Strong experiences with music: Music is much more than just music (R. Bradbury, Trans.). New York, NY: Oxford University Press.

Huron, D. (2006). Sweet anticipation: Music and the psychology of expectation. Cambridge, MA: MIT Press.

Jung, T., Wickrama, K. A. S. (2008). An introduction to latent class growth analysis and growth mixture modeling. Social and Personality Psychology Compass, 2, 302–317.

Juslin, P. N., Liljeström, S., Västfjäll, D., Barradas, G., Silva, A. (2008). An experience sampling study of emotional reactions to music: Listener, music, and situation. Emotion, 8(5), 668–683.

Koehler, K., Broughton, M. C. (2017). The effect of social feedback and social context on subjective affective responses to music. Musicae Scientiae, 21(4), 479–498.

Lee, K., Ashton, M. C. (2018). Psychometric properties of the HEXACO-100. Assessment, 25, 543–556.

Maniaci, M. R., Rogge, R. D. (2014). Caring about carelessness: Participant inattention and its effects on research. Journal of Research in Personality, 48, 61–83.

McKibben, W. B., Silvia, P. J. (2016). Inattentive and socially desirable responding: Addressing subtle threats to validity in quantitative counseling research. Counseling Outcome Research and Evaluation, 7, 53–64.

McKibben, W. B., Silvia, P. J. (2017). Evaluating the distorting effects of inattentive responding and social desirability on self-report scales in creativity and the arts. Journal of Creative Behavior, 51, 57–69.

Miceli, M., Castelfranchi, C. (2003). Crying: Discussing its basic reasons and uses. New Ideas in Psychology, 21, 247–273.

Nusbaum, E. C., Silvia, P. J. (2014). Unusual aesthetic states. In Tinio, P. P. L., Smith, J. K. (Eds.), The Cambridge handbook of the psychology of aesthetics and the arts (pp. 519–539). Cambridge, England: Cambridge University Press.

Nusbaum, E. C., Silvia, P. J., Beaty, R. E., Burgin, C. J., Hodges, D. A., Kwapil, T. R. (2014). Listening between the notes: Aesthetic chills in everyday music listening. Psychology of Aesthetics, Creativity, and the Arts, 8, 104–109.

Nylund, K. L., Asparouhov, T., Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. Structural Equation Modeling, 14, 535–569.

Pelowski, M. (2015). Tears and transformation: Feeling like crying as an indicator of insightful or "aesthetic" experience with art. Frontiers in Psychology, 8(1006), 1–23.

Pelowski, M., Akiba, F. (2011). A model of art perception, evaluation and emotion in transformative aesthetic experience. New Ideas in Psychology, 29, 80–97.

Schneider, K. J. (2009). Awakening to awe: Personal stories of profound transformation. Lanham, MD: Jason Aronson.

Silvia, P. J., Fayn, K., Nusbaum, E. C., Beaty, R. E. (2015). Openness to experience and awe in response to nature and music: Personality and profound and aesthetic experiences. Psychology of Aesthetics, Creativity, and the Arts, 9, 376–384.

Silvia, P. J., Kaufman, J. C., Pretz, J. E. (2009). Is creativity domain-specific? Latent class models of creative accomplishments and creative self-descriptions. Psychology of Aesthetics, Creativity, and the Arts, 3(3), 139–148.

Sloboda, J. A. (1991). Music structure and emotional response: Some empirical findings. Psychology of Music, 19, 110–120.

Swanson, S. A., Lindenberg, K., Bauer, S., Crosby, R. D. (2012). A Monte Carlo investigation of factors influencing latent class analysis: An application to eating disorder research. International Journal of Eating Disorders, 45, 677–684.

Tan, E. S. (1996). Emotion and the structure of narrative film: Film as an emotion machine. Hillsdale, NJ: Lawrence Erlbaum Associates.

Trimble, M. (2012). Why humans like to cry: Tragedy, evolution, and the brain. New York, NY: Oxford University Press.

Widiger, T. A. (2009). Neuroticism. In Leary, M. R., Hoyle, R. H. (Eds.), Handbook of individual differences in social behavior (pp. 129–146). New York, NY: Guilford.

Zhang, J., Yang, T., Bao, Y., Li, H., Pöppel, E., Silveira, S. (2018). Sadness and happiness are amplified in solitary listening to music. Cognitive Processing, 19, 133–139.